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**Abstract**

Using more than 1600 nighttime profiles obtained by the JPL differential absorption lidars (DIAL) located at Table Mountain Facility (TMF, 34.4°N) and Mauna Loa Observatory (MLO, 19.5°N) a 10-year and 6-year respectively stratospheric ozone climatology is presented. These two systems have been providing high-resolution vertical profiles of ozone number density between 15-50 km, several nights a week since 1989 (TMF) and 1993 (MLO). The climatology presented here is typical of early night ozone values.

The observed seasonal and vertical structure of the ozone concentration at TMF is consistent with that typical of mid- to subtropical latitudes. A clear annual cycle in opposite phase below and above the ozone concentration peak is observed. The observed winter maximum below the ozone peak is associated with a maximum day-to-day variability, typical of a dynamically driven lower stratosphere. The maximum concentration observed in summer above the ozone peak emphasizes the more dominant role of photochemistry. Unlike TMF, the ozone concentration observed at MLO tends to be higher during the summer months and lower during the winter months throughout the entire stratospheric ozone layer. Only a weak signature of the extra-tropical latitudes is observed near 19-20 km, with a secondary maximum in late winter. The only large variability observed at MLO is in the lowermost stratosphere and is associated with the natural variability of the tropical tropopause.

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